Temporary Technical Specifications and Instructions

LAVALIER MICROPHONE MODEL KML

KML - 910-02-00

The condenser microphone KML was developed in order to improve pickup conditions of reporters in interview situations, masters of ceremonies, quizmasters, and all situations in which a speaker wearing a lavalier would also like to pick up the person standing directly accross from him. But even in applications where it is used as an ordinary lavalier microphone, its quality is far superior to non-condenser units of this type. Beyond that, however, its very small and unobtrusive size makes it a favorite in TV studios and fish-pole use where an extremely small and light weight high quality microphone is required.

The microphone is equipped with a cardioid capsule whose axis of incidence is not directed directly up at the speaker's mouth, but rather straight ahead. The person wearing the unit therefore addresses the unit at a 90 degree angle resulting in a 6 dB sensitivity reduction but this without any frequency discrimination as compared with on-axis address. The person being interviewed, on the other hand, will speak on axis and for the usual distance from a reporter will be reproduced at the same level as the interviewer. This makes it unnecessary for a microphone to be continually passed back and forth between the two speakers.

The microphone's front-facing characteristic results in completely natural sound for the wearer and does not require the equalization normally recommended for lavalier microphones.

The microphone is equipped with both a lanyard and a tie clasp with which the unit may be fastened to tie, clothing, blouse etc. to prevent its slipping aside.

The capsule may be removed simply by unscrewing it. The capsule is identical to that used in the U-64, KM-64, and KM-84 microphones, its frequency response, however, has been modified to give a greater roll-off at low frequencies which is desirable for speech reproduction.

Operating and Connection Possibilities:

The connector pin assignments of the KML microphone assures that this unit may be operated in conjunction with the 18 Volt wireless microphone transmitters which find widespread use in the German broadcasting system. It is therefore not compatible with the other 6-pole connectors of NEUMANN KM microphones. The current consumption of the KML is so small (approx. 1 mA), that the operating life of the 18 Volt battery is not noticeably reduced.

The microphone may not be plugged into the 6-pole miniature Tuchel connectors which are intended for the traditional tube equipped miniature microphones. Its plug is therefore coded with a light blue cable entry cap. Pin 3 which is not used in the KML has been cut off.

The enclosed schematic shows the other connection possibilities available.

Operation with any wireless microphone transmitter even if not using 18 Volt battery is possible according to (B) if the very small battery box BSL is interposed. Since only low microphone levels such as are found in dynamic units are permissible at the input of such transmitters, a fixed loss pad is to be installed in the BSL battery box or a short special cable

(ordered as a model "KLP") containing this pad may be used. The length of this cable allows the BSL to be carried in a nearby coat or trouser pocket.

Operation may be effected either according to "C" again via battery box BSL, or the microphone may be connected according to "D" through the special cylindrical adapter SWL which is equipped with Tuchel chassis connectors front and back and which permits operation from a standard AC power supply used with tube amplifier microphones. (When ordering indicate which AC supply model is to be used!) In the SWL, the voltages required for operation of the KML microphone are obtained and stabilized from the 120 Volt plate supply of the AC power supplies. Both the BSL and SWL furthermore contain a 2:1 transformer since the KML output itself is unbalanced. For this reason the cable lengths used between the KML and its supplies BSL or SWL should be kept as short as feasible. Only extension cables model KL equipped with light blue cable entry caps may be used for this purpose for the reasons given above.

The output capabilities of the KML microphone are adversely affected by increasing interconnect cable lengths as a result of increasing cable capacity. If normal 33 feet cables "KL" of 60 pF/foot are used between microphone and BSL or SWL, then it is permissible to use cable lengths of up to 250 feet behind the BSL or SWL if maximum levels of 200 µbar are anticipated, and up to 500 feet if maximum levels of 100 µbar are to be expected. For every additional 33 feet of KL cable ahead of the BSL or SWL, you must reduce the cable behind these supplies by 120 feet.

When operating this microphone with a transmitter, the microphone's cable may not be significantly lengthened since the cable simultaneously acts as an antenna.

For special purposes an omni-directional capsule KK-63 may be mounted on the KML microphone without any other changes being required.

(When the battery voltage drops in the BSL supply, the two 22.5 Volt batteries may be interchanged but only once, since one of the batteries only serves the purpose of generating polarization voltage which does not consume any current. This produces practically double the battery life as compared with the data given below.)

Technical Data:

Acoustical operation.....	Pressure gradient capsule
Directional characteristic.....	Cardioid
Frequency range.....	40 ... 16,000 Hz
Frequency response (free field).....	linear, below 150 Hz steady roll-off

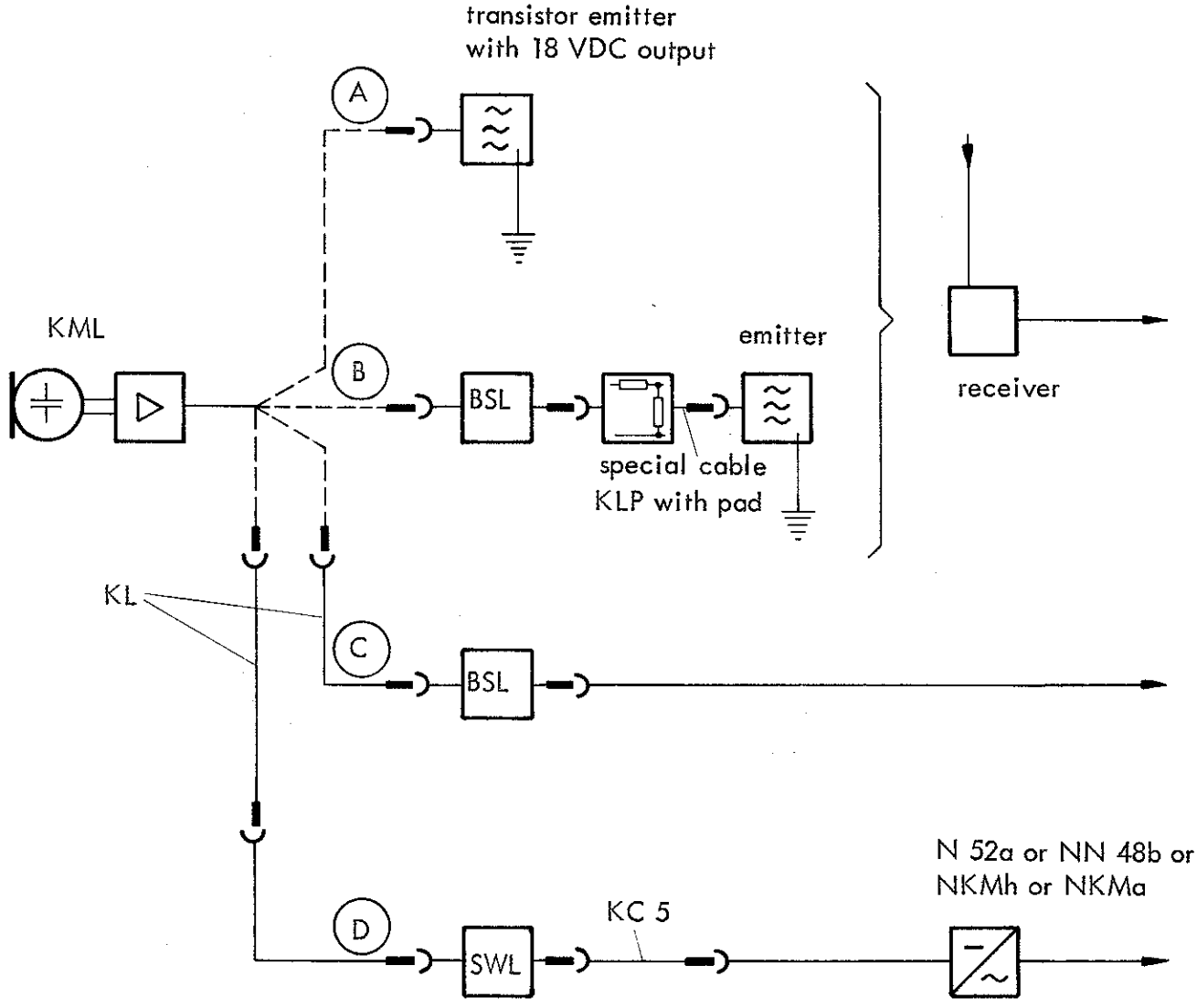
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Sensitivity	
for 18 Volt operation (emitter).....	approx. 0.7 mV/µbar
for operation with BSL or SWL.....	approx. 1,0 mV/µbar
Source impedance measured with BSL or SWL.....	≦ 100 Ω (100 ... 16,000 Hz) ≦ 200 Ω (40 ... 16,000 Hz)
Terminating impedance.....	≧ 1000 Ω
Capsule capacitance.....	approx. 33 pF
Linear noise voltage.....	≦ 6 µV rms (measured with BSL or SWL)
Weighted noise voltage (DIN 45 405)....	≦ 3 µV rms (measured with BSL or SWL)
Equivalent self noise level (DIN 45 405)..	≦ 25 dB re $2 \cdot 10^{-4}$ µbar
for 18 Volt operation.....	≦ 33 dB re $2 \cdot 10^{-4}$ µbar
S.P.L. for 0.5 % THD at 40 Hz, 1 kHz and 5 kHz.....	≧ 200 µbar ≙ 120 dB re $2 \cdot 10^{-4}$ µbar
Allowable cable length.....	see text
Gain of microphone amplifier.....	0 ... -2 dB
incl. SWL or BSL.....	-6 ... -8 dB
Connector.....	T-3400/1 (pin 3 cut off)
Special extension cable.....	Type KL (normal length 33 feet)
Operating voltages	
Amplifier.....	15 ... 25 Volts
Polarizing Voltage.....	45 Volts (BSL) 48 ... 52 Volts (SWL)
Current consumption.....	approx. 1.1 mA (at 20 Volts)
Battery.....	2 x 22.5 Volts according to IEC 15F20
Battery life.....	≧ 30 hours from BSL battery box

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Connection schematic for Lavaliermicrophone KML



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